

INDEX TO VOLUME 8

Authors

A		E		Isbin, H. S.	
Ackerman, G. H.	252	Eagleton, L. C.	418		284
Acrivios, Andreas	542, 629	Eisenklam, Paul	672	J	
Adams, J. M.	569	Emmert, R. E.	171, 702	Jackson, M. L.	659
Aiba, Shuichi	704	Engel, H. H.	530	Jacobs, R. B.	18
Akers, W. W.	587	Eubank, P. T.	117	Johannes, Conrad	590
Albright, Lyle F.	668	F		Johanson, Lennart N.	621
Amdur, I.	521	Fan, Liang-Tseng	239, 576	Jonke, A. A.	53
Anderson, Ralph	66	Faruqui, A. A.	335	Jossi, John A.	59
Archer, David H.	498	Felt, Rowland E.	508	K	
B		Fenske, M. R.	365, 681	Kabel, Robert L.	621
Baber, M. F.	407	Finch, R. N.	455	Kamal, Musa R.	329
Baddour, R. F.	134, 530	Finnigan, J. W.	335	Katz, Donald L.	123
Bailie, Richard C.	239, 576	Flynn, Lawrence W.	362	Kawasaki, Edwin	48
Bankoff, S. G.	30, 63	Forman, J. Charles	209	Kirk, Robert S.	183
Barbolini, Robert R.	649	Fraser, R. P.	672	Klinkenberg, Adriaan	703
Barduhn, Allen J.	176	Freeman, M. P.	450	Knudsen, J. G.	335, 565
Barton, Paul	365, 681	Freeman, P. I.	428	Koyanagi, Tetsushi	309
Behn, V. C.	346	Friedman, M. H.	581	Kuloor, N. R.	277
Benenati, R. F.	359	Furgason, R. R.	654	Kunii, Daizo	340
Bird, R. Byron	143, 378	G		Kurata, Fred	190, 537
Blanks, R. F.	86	Gamson, Bernard W.	482	L	
Bliss, Harding	42	Gauvin, W. H.	437	Lamb, D. E.	281, 284
Blocher, John M., Jr.	143	Gerster, J. A.	407	Larson, M. A.	639
Bondi, A. A.	610	Geser, John J.	494	Lawroski, Stephen	53
Bonilla, Charles F.	490	Gibbons, Joseph H.	274	Lee, B. S.	53
Brian, P. L. T.	205, 322	Gilbert, Nathan	593	Lee, Chau Jen	239, 576
Bromley, LeRoy A.	221	Gill, William N. 137, 284, 303, 423,	513	Lee, Shaw Mei	303
Brosilow, C. B.	359	Gilliland, E. R.	530	Leland, Thomas W., Jr.	482
Brown, Ralph	149	Gluckert, F. A.	460	Lemlich, Robert	214
Buffham, Bryan A.	649	Godleski, E. S.	617	Leonard, Ralph A.	214
Butt, John B.	42, 553	Gomezplata, Albert	273	Letts, R. W. M.	134
C		Gorring, Robert L.	123	Lightfoot, E. N.	79, 416, 708, 710
Cambio, Ronald	66	Grant, R. J.	403	Lohrenz, John	190
Campbell, M. Larry	329, 494, 540	Grieske, Robert B.	550	Lower, J. H.	635
Canjar, L. N.	329, 494, 540	Griskey, Richard W.	498	M	
Carberry, James L.	557	Grove, D. B.	659	Madden, A. J.	233
Cengel, J. A.	335	Gupta, Ashis Sen	608	Manes, Milton	403
Chappelear, Patsy S.	482	H		Masamune, Shinobu	217
Cheung, Henry	221	Habib, A. G.	205	Mason, J. P.	30
Christiansen, E. B.	154, 467	Hanks, Richard W.	467	Matsch, L. C.	135
Chu, Ju Chin	53	Hanna, Owen T.	278	McCormick, Robert H.	365, 681
Chueh, Ping Lin	668	Hanratty, Thomas J.	245	McKetta, J. J., Jr.	501
Churchill, S. W.	201, 690	Harper, John C.	298	Mehra, Vinod S.	604
Clinton, W. W.	569	Harriott, Peter	93, 101, 562	Metzner, A. B.	143, 346
Clough, S. B.	346	Hasson, David	672	Michel, B. J.	262
Cooper, Harrison	445	Hatch, M. R.	18	Miller, Donald N.	183
Costello, C. P.	569	Hellums, J. D.	690	Miller, Eugene	127
Coull, James	274	Henley, Ernest J.	133	Miller, I. F.	201
Craig, S. E., Jr.	154	Hennico, Alphonse	394	Miller, S. A.	262
Crespo, Manuel J.	383	Hill, Arthur B.	681	N	
Croop, E. J.	26	Hoelscher, H. E.	103, 108, 136, 714	Nagata, Isamu	161, 163
Crownover, Carl F.	166	Hoffman, Dwight S.	508	Narsimhan, G.	712
Cussler, E. L., Jr.	708	Hoffman, Paul	134	O	
D		Holman, K. L.	659	Olander, D. R.	646
Damerell, Glenn I.	233	Holmes, John T.	646	Olney, R. B.	252
Davenport, A. J.	428	Hougen, O. A.	5	Orell, Aluf	350
Davis, J. A.	537	Houghton, Gerald	274	Oxley, Joseph H.	143
Del Casal, Eduardo	423, 513, 570	Hsu, H. W.	143	P	
Delaney, L. J.	418	Hsu, James P.	593	Perry, R. H.	389
Dhillon, Sharanjit	389	Hu, Yee Chien	176	Petersen, E. E.	542
DiBenedetto, A. T.	79	Huff, James E.	193	Pigford, R. L.	171, 702
Dodge, D. W.	143	Huffine, Coy L.	490	Powers, John E.	166
Dombrowski, Norman	672	Hughmark, G. A.	288	Prausnitz, J. M.	66, 86, 133, 519, 563
Dranoff, Joshua S.	248	I		Pressburg, B. S.	288
Dullien, F. A. L.	113, 293	Ibrahim, S. H.	277		
Duncan, J. B.	38				

INDEX TO VOLUME 8

Authors

A		E		Isbin, H. S.		284
Ackerman, G. H.	252	Eagleton, L. C.	418	J		
Acrivios, Andreas	542, 629	Eisenklam, Paul	672	Jackson, M. L.	659	
Adams, J. M.	569	Emmert, R. E.	171, 702	Jacobs, R. B.	18	
Aiba, Shuichi	704	Engel, H. H.	530	Johannes, Conrad	590	
Akers, W. W.	587	Eubank, P. T.	117	Johanson, Lennart N.	621	
Albright, Lyle F.	668	F		Jonke, A. A.	53	
Amdur, I.	521	Fan, Liang-Tseng	239, 576	Jossi, John A.	59	
Anderson, Ralph	66	Faruqui, A. A.	335	K		
Archer, David H.	498	Felt, Rowland E.	508	Kabel, Robert L.	621	
B		Fenske, M. R.	365, 681	Kamal, Musa R.	329	
Baber, M. F.	407	Finch, R. N.	455	Katz, Donald L.	123	
Baddour, R. F.	134, 530	Finnigan, J. W.	335	Kawasaki, Edwin	48	
Bailie, Richard C.	239, 576	Flynn, Lawrence W.	362	Kirk, Robert S.	183	
Bankoff, S. G.	30, 63	Forman, J. Charles	209	Klinkenberg, Adriaan	703	
Barbolini, Robert R.	649	Fraser, R. P.	672	Knudsen, J. G.	335, 565	
Barduhn, Allen J.	176	Freeman, M. P.	450	Koyanagi, Tetsushi	309	
Barton, Paul	365, 681	Freeman, P. I.	428	Kuloor, N. R.	277	
Behn, V. C.	346	Friedman, M. H.	581	Kunii, Daizo	340	
Benenati, R. F.	359	Furgason, R. R.	654	Kurata, Fred	190, 537	
Bird, R. Byron	143, 378	G		L		
Blanks, R. F.	86	Gamson, Bernard W.	482	Lamb, D. E.	281, 284	
Bliss, Harding	42	Gauvin, W. H.	437	Larson, M. A.	639	
Blocher, John M., Jr.	143	Gerster, J. A.	407	Lawroski, Stephen	53	
Bondi, A. A.	610	Geser, John J.	494	Lee, B. S.	53	
Bonilla, Charles F.	490	Gibbons, Joseph H.	274	Lee, Chau Jen	239, 576	
Brian, P. L. T.	205, 322	Gilbert, Nathan	593	Lee, Shaw Mei	303	
Bromley, LeRoy A.	221	Gill, William N. 137, 284, 303, 423, 513, 570		Leland, Thomas W., Jr.	482	
Brosilow, C. B.	359	Gilliland, E. R.	530	Lemlich, Robert	214	
Brown, Ralph	149	Gluckert, F. A.	460	Leonard, Ralph A.	214	
Buffham, Bryan A.	649	Godleski, E. S.	617	Letts, R. W. M.	134	
Butt, John B.	42, 553	Gomezplata, Albert	273	Lightfoot, E. N.	79, 416, 708, 710	
C		Gorring, Robert L.	123	Lohrenz, John	190	
Cambio, Ronald	66	Grant, R. J.	403	Lower, J. H.	635	
Campbell, M. Larry	329, 494, 540	Grieske, Robert B.	550	M		
Canjar, L. N.	329, 494, 540	Griskey, Richard W.	498	Madden, A. J.	233	
Carberry, James L.	557	Grove, D. B.	659	Manes, Milton	403	
Cengel, J. A.	335	Gupta, Ashis Sen	608	Masamune, Shinobu	217	
Chappelear, Patsy S.	482	H		Mason, J. P.	30	
Cheung, Henry	221	Habib, A. G.	205	Matsch, L. C.	135	
Christiansen, E. B.	154, 467	Hanks, Richard W.	467	McCormick, Robert H.	365, 681	
Chu, Ju Chin	53	Hanna, Owen T.	278	McKetta, J. J., Jr.	501	
Chueh, Ping Lin	668	Hanratty, Thomas J.	245	Mehra, Vinod S.	604	
Churchill, S. W.	201, 690	Harper, John C.	298	Metzner, A. B.	143, 346	
Clinton, W. W.	569	Harriott, Peter	93, 101, 562	Michel, B. J.	262	
Clough, S. B.	346	Hasson, David	672	Miller, Donald N.	183	
Cooper, Harrison	445	Hatch, M. R.	18	Miller, Eugene	127	
Costello, C. P.	569	Hellums, J. D.	690	Miller, I. F.	201	
Coull, James	274	Henley, Ernest J.	133	Miller, S. A.	262	
Craig, S. E., Jr.	154	Hennico, Alphonse	394	N		
Crespo, Manuel J.	383	Hill, Arthur B.	681	Nagata, Isamu	161, 163	
Croop, E. J.	26	Hoelscher, H. E.	103, 108, 136, 714	Narsimhan, G.	712	
Crownover, Carl F.	166	Hoffman, Dwight S.	508	O		
Cussler, E. L., Jr.	708	Hoffman, Paul	134	Olander, D. R.	646	
D		Holman, K. L.	659	Olney, R. B.	252	
Damerell, Glenn I.	233	Holmes, John T.	646	Orell, Aluf	350	
Davenport, A. J.	428	Hougen, O. A.	5	Oxley, Joseph H.	143	
Davis, J. A.	537	Houghton, Gerald	274	P		
Del Casal, Eduardo	423, 513, 570	Hsu, H. W.	143	Perry, R. H.	389	
Delaney, L. J.	418	Hsu, James P.	593	Petersen, E. E.	542	
Dhillon, Sharanjit	389	Hu, Yee Chien	176	Pigford, R. L.	171, 702	
DiBenedetto, A. T.	79	Huff, James E.	193	Powers, John E.	166	
Dodge, D. W.	143	Huffine, Coy L.	490	Prausnitz, J. M.	66, 86, 133, 519, 563	
Dombrowski, Norman	672	Hughmark, G. A.	288	Pressburg, B. S.	288	
Dranoff, Joshua S.	248	I				
Dullien, F. A. L.	113, 293	Ibrahim, S. H.	277			
Duncan, J. B.	38					

	R		Slattery, John C.	663	Veigel, Neil D.	143
	Ramalho, R. S.	559	Sleicher, C. A., Jr.	471	Venezian, Emilio	383
	Ramaswami, D.	5	Smith, J. C.	617	Vermeulen, Theodore	394
	Randolph, A. D.	639	Smith, J. M.	117, 217, 340, 478, 654	Vivian, J. E.	205
	Read, H. E.	346	Smith, S. B.	403	Vohr, John	280, 284
	Reamer, H. H.	635	Soo, S. L.	576		
	Reid, R. C.	322	Spalding, Charles W.	685	W	
	Reiss, L. Philip	245	Sparks, Robert E.	103, 108, 136	Wakao, Noriaki	478
	Rettig, R. L.	708	Sparrow, E. M.	12, 599	Walker, C. A.,	42, 193
	Reynes, Enrique G.	357	Stewart, Warren E.	421, 425	Walsh, Thomas J.	48
	Rodewald, Newell	537	Stiel, Leonard I.	59, 229, 527	Wang, D. I. J.	135
	Rood, R. E.	369	Strand, C. P.	252	Weber, James H.	508
	Rothfus, R. R.	26			Welker, J. Reed	508
	Rowlinson, J. S.	428	T		Westwater, J. W.	350
	S		Talmadge, John A.	649	White, J. L.	281, 284
	Sage, B. H.	383, 635	Tamura, Mikio	161, 163	White, R. R.	581
	Sakiadis, B. C.	317	Teller, A. J.	369	Wilde, Douglass J.	629
	Sanscrainte, Jack	48	Terrier, Francois	668	Wilke, C. R.	221, 646
	Savins, J. G.	272	Themelis, N. J.	437	Williams, Michael C.	378
	Scott, D. S.	113, 293	Thodos, George	34, 59, 209, 229, 357, 362, 527, 550, 604, 608	Willhite, G. P.	340
	Secrest, Arthur C.	143	Thomas, David G.	266, 373	Wohl, Kurt	127
	Selwood, P. W.	478	Tiller, F. M.	445, 559	Wright, C. H.	335
	Shah, M. J.	542	Toor, H. L.	38, 70, 561	Y	
	Shannon, Paul T.	668	Towilson, Howard E.	176	Yasuda, Takeo	704
	Sherwood, A. E.	519	Turner, M. M.	587	Yen, Lewis Chinsun	501
	Sherwood, Thomas K.	590	V		Yen, Yin-Chao	34
	Sitaraman, Ramalingam	277	Van Winkle, Matthew	455	York, J. Louis	149
	Skrivan, J. F.	450	Vassiliou, Basil	248	Yoshida, Fumitake	5, 309

Title Index

Absorption of Ammonia by Acetic Acid Solutions	389	Effect of a Surface Active Agent on the Velocity of Rise of Benzene Drops in Water	274
Adsorption of Methane and Hydrogen on Packed Beds of Activated Carbon	494	Energy Equation for Two-Phase Flow, The	280, 284
Adsorption of Methane from Hydrogen on Fixed Beds of Silica Gel	540	Equations for Transient Heat Transfer in Packed Beds	703
Adsorption of Normal Paraffins and Sulfur Compounds on Activated Carbon	403	Equilibrium Flow of a General Fluid Through a Cylindrical Tube	317
Analysis of Blow Over and the Steady State Bed Particle Size Distribution in a Reacting Fluid Bed, An	714	Experimental Determination of Critical Temperatures and Pressures of Mixtures: the Methane-Ethane-n-Butane System	209
Analytical Study of Heat Transfer in Laminar-Turbulent Transition Flow Between Parallel Plates, An	303	Experimental Study of Liquid-Phase Turbulent Diffusion, An: Part II-Calculaton of Local Turbulent Mass Transfer Coefficients in the Turbulent Wake of a Cylinder	108
Applicability of the Stefan-Maxwell Equations to Multicomponent Diffusion in Liquids	708	Experimental Study of Liquid-Phase Turbulent Diffusion, An: Part I. Fluid Mechanical Data	103
Application of Reciprocal Variational Principles to Laminar Flow in Uniform Ducts	425	Experimental Study of Three Component Gas Diffusion, An	38
Approximations to the Drag Force on a Sphere Moving Slowly through Either an Ostwald-De Waele or a Sisko Fluid	663	Experimental Transfer Response of a Pilot-Plant Distillation Column: Part II. Response to Liquid and Vapor Rate Perturbations	407
Axial Solid Distribution in Gas-Solid Fluidized Beds	239, 576	F	
B		Flow of Gases Through Porous Solids Under the Influence of Temperature Gradients	530
Binary Liquid Diffusion Coefficients	329	Flow of Rarefied Gases, The	293
Bubble Rise in a Packed Bed Saturated with Liquids	123	Fundamental Aspects of Rotating Disk Contactor Performance	252
C		G	
Characteristics of Thermistors When Used as Power Sources of Known Temperature	273	Gas Absorption Accompanied by Chemical Reaction: A Study of the Absorption of Carbon Dioxide in Aqueous Solutions of Monethanolamine	171, 702
Coalescence and Entrainment: Phenomena on Sieve Trays	369		
Coalescence Frequencies in Agitated Liquid-Liquid Systems	233		

Gas Absorption with Simultaneous Irreversible First-Order Reaction	710	Lennard-Jones Force Constants from Viscosity Data: Their Relationship to Critical Properties	363	vent Selectivity for Hydrocarbons	66
Gas Dynamic Processes Involving Suspended Solids (Erratum)	576	Letter to the Editor	135, 272, 562	Pore Diffusion in Silver Catalysts	217
Gas Mixing in a Square Duct: II	127	Liquid Phase Activity Coefficients and Standard State Hypothetical Liquid Fugacities for Hydrocarbons	508	Power Requirements and Blend Times in the Agitation of Pseudoplastic Fluids	617
H		Low Temperature Ortho-Para Hydrogen Conversion—Kinetic Studies	478	Power Requirements of Gas-Liquid Agitated Systems	262
Heat of Solution of Gases at High Pressure, The	519	M		Prediction of Pressure Drop in Two-Phase Single-Component Fluid Flow	18
Heat Radiation Between Simply-Arranged Surfaces Having Different Temperatures & Emissivities	12	Mass and Heat Transfer in the Flow of Fluids Through Fixed and Fluidized Beds of Spherical Particles	608	Prediction of Vapor-Liquid Equilibria from the Corresponding States Principle	482
Heat Transfer from a Cylinder to a Power-Law Non-Newtonian Fluid	542	Mass, Heat, and Momentum Transfer in the Flow of Gases Past Single Spheres	34	Prediction of Vapor-Liquid Equilibria of Binary Systems: Part I. Effect of Pressure on Vapor-Liquid Equilibria of Binary Systems	161
Heat Transfer from the Surface of a Steam Bubble in Turbulent Subcooled Liquid Stream	30	Mass Transfer and Effective Interfacial Areas in Packed Columns	309	Prediction of Vapor-Liquid Equilibria of Binary Systems: Part II. Hydrocarbon Systems	163
Heat Transfer in Beds of Fine Particles (Heat Transfer Perpendicular to Flow)	340	Mass Transfer in Dilute Turbulent and Nonturbulent Systems with Rapid Irreversible Reactions with Equal Diffusivities	70	Prediction of Vapor-Liquid Equilibrium Constants for Binary Hydrocarbon Systems in the Critical Region, The	604
Heat Transfer in Laminar Power Law Flows with Energy Sources	137	Mass Transfer in Laminar-Boundary-Layer Flows with Finite Interfacial Velocities	421	Prediction of Vapor-Liquid Equilibrium for Polar-Nonpolar Binary Systems	455
Heat Transfer in the Nitrogen Dioxide-Nitrogen Tetroxide System	654	Mass Transfer to Particles: Part I. Suspended in Agitated Tanks	93	Properties of Some New Gas Hydrates and Their Use on Demineralizing Sea Water, The	176
Heat Transfer to Pseudoplastic Fluids in Laminar Flow	154	Mass Transfer to Particles: Part II. Suspended in a Pipeline	101	R	
Heat Transfer with Simultaneous Chemical Reaction: Film Theory for a Finite Reaction Rate	322	Maximum Rate of Sublimation of Solids, The	590	Rates of Reaction in a Recycling System—Dehydration of Ethanol and Diethyl Ether Over Alumina	42
High Temperature Transport Properties of Gases; Limitations of Current Calculating Methods in the Light of Recent Experimental Data	521	Maximum Stable Drop Size in Turbulent Flow	471	Rate Studies of the Decomposition of Ammonia and Methane in a Plasma Jet	450
Holdup and Pressure Drop with Gas-Liquid Flow in a Vertical Pipe (Erratum)	288	Measurement of Instantaneous Rates of Mass Transfer to a Small Sink on a Wall	245	Reaction Kinetics and Adsorption Equilibria in the Vapor-Phase Dehydration of Ethanol	621
I		Micro-Macro Effectiveness Factor for the Reversible Catalytic Reaction, The	557	Reaction Kinetics in the Absorption of Chlorine into Aqueous Media	685
Ignition Limits for Pilot-Stabilized High-Velocity, Turbulent, Butane-Air Mixtures at Low Pressure	498	Multicomponent Diffusion Problems (Erratum)	143	Reduced State Vapor-Pressure Relationship and its Application to Hydrocarbons, A	357
Immiscibility of Hydrocarbons and Liquid Methane	428	N		Reduction of Iron Oxide in Gas-Conveyed Systems	437
Improvement of Burnout Heat Flux by Orientation of Semicircular Heaters	569	Nonequilibrium Thermodynamic Theory for Concentration Profiles in Liquid Extraction	394	Reference Frames in Diffusion	561
Influence of Baffles in Packed Beds on Radial Transport, The	134	Normal Boiling Points and Critical Constants of Saturated Aliphatic Hydrocarbons, The	527	Reply	284
Isothermal Diffusion with a Variable Density	278	Note on j Factors for Turbulent Flow in Annuli	565	Role of Porosity in Filtration: Part V. Porosity Variation in Filter Cakes	445
K		Note on Latent Heat Transport in Nucleate Boiling, A	63	S	
Kinetics of a Carbon Deposition in a Fluidized Bed (Erratum)	143	Note on the Method of Moments, A	553	Separation of Ions with Permselective Membranes, The	79
Kinetics of Ion Exchange, The	248	Note on Natural Convection Effects in Fully Developed Horizontal Tube Flow, A	570	Single Formula for Replacing Smoker Equations in Binary Distillation	559
Kinetics of Particle Growth in a Fluidized Calciner	53	Note on Unsteady Forced Convection Heat Transfer, A	284	Six-Stage Vapor-Liquid Equilibrium Unit	365
Kinetics of Reduction of Ferrous Oxide with Hydrogen	712	O		Skin Friction Patterns for Transitional Flow in Annuli	26
Kinetics of Reduction of Iron Oxide with Carbon Monoxide and Hydrogen	48	On the Use of the Activity Driving Force in Rate Equations	133	Solid-Liquid-Vapor Phase Behavior of the Methane-Carbon Dioxide System	537
Kinetics of the Catalytic Dehydration of Primary Alcohols	183	P		Solubility of Chlorofluoromethanes in Nonvolatile Polar Organic Solvents	668
L		Particle-Size Effects in the Compression of Powders	490	Spontaneous Interfacial Cellular Convection Accompanying Mass Transfer: Ethylene Glycol-Acetic Acid-Ethyl Acetate	350
Laminar and Turbulent Flow of Unstable Liquid-Liquid Emulsions	335	Phase Behavior of Two Mixtures of Methane, <i>n</i> -Pentane, and Silica, The	635		
Laminar Flow in Isosceles Triangular Ducts	599	Photochlorination of Chloroform in Continuous Flow Systems, The	193		
Laminar-Turbulent Transition in Nonisothermal Flow of Pseudoplastic Fluids in Tubes, The	467	Physical and Chemical Forces in Sol-			

Sprays Formed by Flashing Liquid Jets	149
Standard States and the Gibbs-Duhem Equation for Nonisothermal or Nonisobaric Phase Equilibria	563
Steady Flow of an Oldroyd Viscoelastic Fluid in Tubes, Slits, and Narrow Annuli	378
Study of Consecutive Competitive Reaction Systems, A	581
Surface Effects in a Pulsed, Packed Column	659

T

Temperatures and Particle Pressures at the Surfaces of Catalyst Particles	5
Test of the Assumption of Interfacial Equilibrium in Measurements of the Gas Film Mass Transfer Coefficient, A	418
Theoretical Correlation of Spray-Dryer Performance, A	460
Theoretical Investigation of Natural Convection Effects in Forced Horizontal Flows, A	513
Thermal and Material Transfer in Turbulent Gas Streams: One-Inch Spheres	383

Thermal Conductivity of Gas Mixtures	221
Thermal Conductivity of Nonassociated Liquids	610
Thermal Cracking of Ethane and Ethylene in a Stock Tube	201
Thermodynamic Correlation of Nonpolar Gas Solubilities in Polar, Nonassociated Liquids, A	501
Thermodynamic Properties of Polar Gases in the Dilute Phase	117
Transfer Functions of Heat Exchangers	593
Transient and Steady State, Free and Natural Convection, Numerical Solutions: Part I. The Isothermal, Vertical Plate	690
Transient and Steady State, Free and Natural Convection, Numerical Solutions: Part II. The Region Inside a Horizontal Cylinder	692
Transient and Steady State Size Distributions in Continuous Mixed Suspension Crystallizers	639
Transport Characteristics of Suspensions: Part IV. Friction Loss of Concentrated-Flocculated Suspensions in Turbulent Flow	266
Transport Characteristics of Suspensions: Part VI. Minimum Transport Velocity for Large Particle	

Size Suspensions in Round Horizontal Pipes	373
Transport Properties of Gases in Porous Media at Reduced Pressures With Reference to Freeze-Drying	298
Turbulent Flow of Non-Newtonian Systems (Erratum)	143

U

Unified Vectorial Approach to Difference Point Methods in Stagewise Operations	214
Unsteady Multicomponent Diffusional Evaporation (Erratum)	143
Use of Momentum and Energy Equations in Two-Phase Flow	281, 284

V

Vapor-Liquid Equilibria for C_8 Hydrocarbons	681
Viscosity of Polar Gases at Normal Pressures, The	229
Viscosity of Pure Substances in the Dense Gaseous and Liquid Phases, The	59
Void Fraction Distribution in Beds of Spheres	359
Volumetric Properties of Gas Mixtures Containing One or More Polar Compounds	86

Information Retrieval Index

The *A.I.Ch.E. Journal* is using the Key Words as part of the index to Volume 8. The key word is followed by a dash or a boldface number, indicating the role. The page number of the article in which the key word appears is shown after the role.

A	Aluminum Nitrate—1, 53	608; 10, 123, 239, 248, 340	Capillaries—9, 113; 10, 335	Combustion—8, 498
Abas-zade—, 59	Aluminum Oxide—1, 53; 4, 478	Benzene—1, 123, 166, 581; 6, 587	Carbon Dioxide—1, 340, 546; 9, 38, 127, 171	Combustion Chamber—6, 498
Absolute Rate—, 646	Amberlite Ion Exchange Resins—10, 248	Benzoic Acid—4, 346; 9, 659	Carbon Disulfide—1, 403	Column—8, 407; 10, 659
Absorption—, 205; 7, 248; 8, 171, 190, 248, 309, 389, 685; 10, 685	Amines—1, 171	Binary—, 86, 221, 455, 681; 8, 163, 604; 9, 209, 329	Carbon Tetrachloride—5, 587	Column/Packed—9, 659
Acceleration—6, 513	Ammonia—1, 389, 450, 581; 9, 59	Bingham Plastic Fluids—9, 467	Carbonyl Sulfide—1, 403	Column/Sieve Plate—9, 659
Acetic Acid—1, 350, 389	Amplitude Ratio—7, 639	Biphenyl—1, 590	Carbopol—9, 467	Columns (Process)—8, 252; 10, 53, 166, 171, 205, 309, 389, 394
Acetone—1, 309	Analogies—10, 608	Blending—8, 617	Carboxymethyl Cellulose—5, 663	Comparison—, 621
Acids (Carboxylic)—1, 389	Analogue Computer—10, 407	Blend Time—7, 617	Cascaded Tanks—10, 639	Complexes—9, 66
Acids (Carboxylic)—4, 346	Analogues—9, 34	Boilers—10, 593	Catalysis—4, 322; 9, 5, 42, 183, 478	Composition—6, 498, 587, 668, 681; 7, 546, 604
Acids Inorganic—1, 79	Analysis—10, 59, 229	Boiling—8, 30; 9, 53	Catalyst—4, 621	Compressibility—6, 229; 9, 86, 117
Activated Carbon—4, 494; 10, 403	Analyzing—8, 214	Boiling Point—6, 604	Catalysts—10, 183, 217	Compressibility Factor—6, 455
Activation—8, 450	Anions—8, 79	Bolometer—10, 590	Cations—1, 79; 8, 79	Compression—8, 490
Activities—8, 394; 9, 482, 681	Annular—8, 190; 9, 26; 10, 166	Boundaries—6, 359; 8, 26; 9, 245	Cells—2, 350; 10, 38, 209, 221, 646	Compromise Control—8, 629
Activity Coefficient—7, 455	Apparent Viscosity—6, 617	Boundary Layers—8, 513	Chemical Dehydration—9, 42	Computations—10, 322
Activity Coefficients—2, 508	Aqueous-Ions—8, 79	Brominated Hydrocarbons—9, 176	Chlorinated Hydrocarbons—1, 18, 309	Computer—10, 455, 639, 654
Adsorption—4, 635; 5, 494, 549; 8, 403, 478, 539, 621; 9, 42; 10, 621	Area Surfaces—7, 309; 9, 309	Bubbles—8, 30; 9, 123	Chlorine—1, 205, 581, 685	Computers—10, 205, 581, 690
Aerodynamics—9, 103, 672	Argon—1, 521; 9, 539	Bubbling—9, 30	Chlorobenzene—2, 581	Concave—, 359
Aerosols—9, 149	Aromatics—9, 357	Bulk Density—6, 217; 7, 239; 9, 239	Circulation—9, 252	Concentration—6, 329, 350
Agglomeration—8, 490; 9, 233	Associated—6, 501	1,3-Butandiol—1, 668	Clays—1, 266	Concentrations—1, 581; 2, 581; 9, 70, 394
Agitation—6, 635; 8, 262, 617; 9, 93	Atomizers—10, 149	1,4-Butandiol—1, 668	Clusters—2, 350	Concentric—10, 26, 166
Agitators—10, 262	Atomizing—9, 149; 10, 460	Butane—1, 209, 604	CMC—9, 467	Condensation—8, 587
Air—5, 498, 309; 9, 34, 123, 127, 262, 383	Average Porosity—7, 455	Butane-Air—1, 498	Coalescence—9, 672	Condenser—10, 587
Alcohols—1, 42, 171, 183, 248, 309; 2, 42; 4, 346; 5, 123	Axial—, 252	<i>n</i> -Butane—1, 403	Coalescing—7, 233; 9, 233	Condensers—10, 593
Alumina—4, 42, 183, 478	Azeotropes—9, 681	Butanol—1, 183	Coefficients—93, 127; 7, 30, 70, 205, 329; 8, 329; 9, 205, 252, 389	Conditioning Temperature—6, 635
	Azeotropic—, 455		Colburn Analogy—8, 654	Conditions—9, 5
	B		Cold Stream Velocity—6, 498	Conduits—10, 127
	Baffles—10, 93, 617	C	Collision—, 685	Conduction—7, 154
	Baffling—8, 93	Calcination—9, 53		
	Balls—9, 359; 10, 383	Calcium Carbonate—1, 460		
	Beads—10, 123, 183, 340	Camphor—1, 590		
	Beds—, 494, 549; 9, 359,	Capacity—7, 403; 9, 252		

- Conductivity—7, 298
 Constants—, 229, 357, 621; 7, 183, 205; 8, 117; 9, 621
 Contacting—9, 252
 Control—8, 629; 9, 407
 Control Limits—1, 629
 Convection—2, 350; 8, 513, 690
 Conversion—7, 450
 Convex—, 359
 Correlation—1, 581; 2, 581; 8, 403, 668
 Correlations—8, 26, 59, 66, 93, 123, 127, 217, 221, 229, 340, 471, 478, 604; 9, 53, 117, 239, 262, 266, 309, 329; 10, 93, 190, 608
 Costs—7, 176
 Counter—, 593
 Countercurrent—9, 38
 Counter-Parallel—, 593
 Cracking (Chemical)—9, 450
 Critical—, 117, 455; 6, 229; 8, 209; 9, 357
 Critical Compressibility Factor—8, 536
 Critical Pressure—9, 604
 Critical Temperature—8, 559; 9, 604
 Crystallization—8, 639
 Crystallizer—10, 639
 Crystal Magma—8, 639
 Crystal Suspension—8, 639
 Cyclohexane—5, 646
 Cylinders—10, 26, 103, 221, 317, 690
 Currents—8, 79
- D**
- Decane—5, 646; 9, 519
 Decomposition—9, 183, 450
 Dehydration—8, 621; 9, 183
 Deissler Analogy—8, 654
 Demineralizing—8, 176
 Density—6, 93; 7, 490; 9, 86, 239
 Design—8, 437, 471, 478
 Deuterium—1, 521
 Diagrams—9, 209
 Dialysis—9, 79
 Diameter—6, 93, 127, 262, 335, 359
 Diaphragms—10, 646
 Dichloromono fluoromethane—1, 668
 Diethyl adipate—1, 668
 Diethyl Ether—1, 42; 2, 42
 Diethyl oxalate—1, 668
 Differences—10, 214
 Differential—, 42
 Differential Equations—1, 581
 Diffusion—, 38; 1, 494; 6, 93; 7, 217, 329; 8, 38, 79, 113, 322, 329, 346, 450, 478, 549, 646, 649; 9, 70, 166, 183, 217, 252
 Diffusivity—6, 649
 Dimensional—, 59, 229
 N,N-Dimethylacetamide—1, 668
 N,N-Dimethylformamide—1, 668
 Dipole Moments—8, 117
 Discharging—7, 127
 Disk—, 389
 Dispersing—8, 262; 9, 149
 Dispersions—8, 149, 233, 335; 9, 252, 262, 346, 471
 Displacement—9, 123
 Disposal—9, 53
 Dissociation—8, 654
 Distance Through Solid—6, 445
 Distillation—8, 309, 407; 9, 66, 455
 Distributed System—, 593
 Distribution—, 70, 103; 7, 303, 513; 8, 450; 9, 239
 Disturbance—1, 407
 Dowex 50—4, 621; 5, 621
 Drag—8, 26, 123; 9, 34
 Drag Coefficient—8, 663
 Drag Force—8, 663
 Draw-Down Time—6, 639
 Drops (Droplets)—7, 149, 471; 8, 233, 672; 9, 252
 Dryers—10, 298
 Drying—8, 298, 460
 Dual Site—, 621
 Ducts—10, 127
 Duct Size—6, 599
 Dynamic Behavior—7, 639
 Dynamics—8, 53, 593; 9, 672
- E**
- Economics—8, 659; 9, 176
 Eddies—9, 103
 Effectiveness—8, 478
 Eigenvalues—7, 303
 Elastomers—9, 610
 Electrochemical—, 245
 Electrodes—10, 245
 Electro dialysis—9, 79
 Electron-Micrographs—7, 437
 Emissivity—6, 12
 Empirical—, 59, 221; 9, 117, 163
 Emulsions—8, 335; 9, 252, 471
 Energy—, 450; 8, 659
 Enthalpy—7, 519
 Equation of State—9, 482
 Equations—8, 317, 357; 9, 221, 303; 10, 59, 248
 Equations of State—9, 86
 Equilibrium—2, 635; 7, 163; 8, 394, 455, 482, 519, 604, 659, 681; 9, 163; 10, 501
 Equilibrium Stills—10, 681
 Error—3, 629
 Estimating—8, 329, 346, 482, 521, 559, 608, 610; 9, 389
 Ethane—1, 209, 604
 Ethane—9, 508
 Ethanethiol—1, 403
 Ethanol—1, 42, 183, 309, 621; 2, 42; 10, 621
 Ethanolamines—2, 581
 Ethers—1, 42; 2, 42
 Ethyl Acetate—1, 350
 Ethylene—2, 42; 9, 539
 Ethylene Glycol—1, 350
 Ethylene Oxide—1, 581
 Ethyl Ether—2, 621
 Ethyllaurate—1, 668
 Evaporation—8, 63, 309, 590; 9, 383
 Evaporation Coefficient—9, 7, 590
 Exchange—8, 248; 9, 79
 Exchanges—10, 79
 Exchanging—8, 248; 9, 79
 Experimental—5, 460
 Exterior—6, 629
 External—, 494
 Extraction—8, 252, 350, 659; 9, 66, 394
 Extractive—, 455
 Extractors—10, 394
 Eyring—, 346
- F**
- Factors—, 34, 335; 8, 26
 Feed—6, 450
 Fields—6, 513
 Film Theory—, 322
 Filtration—8, 445
 Finite Difference—10, 690
 Flow—, 494, 549
 Fixed Bed—, 478
 Flashing—1, 149
 Flooding—7, 659
 Flow—, 450, 494, 549; 6, 30, 205; 8, 34, 103, 123, 154, 190, 266, 298, 303, 335, 340, 471, 513, 672; 9, 18, 26, 30, 70, 113, 123, 245, 266, 317, 389
 Flow-Rates—6, 309, 340
 Flow Stability—7, 467
 Fluid Flow—, 467; 8, 34, 113, 127, 154, 190, 266, 298, 303, 335, 340, 340, 383, 471, 513, 599, 608; 9, 12, 26, 30, 70, 103, 123, 245, 317, 389
 Fluidized—, 239, 608
 Fluidizing—8, 239; 9, 53
 Fluid Mechanics—8, 103; 9, 317
 Fluids—8, 18, 86, 113, 117, 123, 163, 672; 9, 26, 34, 38, 59, 70, 127, 154, 171, 190, 221, 229, 298, 335, 340, 346, 383, 471
 Fluorinated Hydrocarbons—1, 18, 176
 Flux—8, 12
 Food—5, 298
 Force (Energy)—6, 513
 Forcing Function—1, 593
 Forecasting—9, 18, 190
 Forming—8, 672
 Free—, 690
 Free Energy—10, 403
 Freezers—10, 298
 Freezing—8, 298
 Freon r Fluorinated Hydrocarbons—9, 149, 176
 Frequency—7, 233
 Frequency Response—8, 593
 Friction—8, 26; 9, 34, 335
 Friction Factors—10, 266
 Fugacities—9, 482
 Functionality—7, 668
- G**
- Gamma Rays—10, 239
 Gas—5, 322
 Gas-Conveyed Reactions—8, 437
 Gases—8, 18, 86, 113, 117; 9, 34, 38, 59, 127, 171, 190, 221, 229, 298, 340, 383, 521
 Gaussian—8, 629
 Generalized Correlations—10, 508
 Glass—10, 123, 340
 Globules—8, 233; 9, 252, 471
 Glycerin—1, 248; 5, 123
 Gradients—8, 394
 Graetz—, 154
 Graphs—, 5
 Gravity—6, 513
 Growing—9, 53
 Growth Rate—6, 639
- H**
- Halogenated Hydrocarbons—1, 18, 149, 176, 309
 Heat—8, 221; 9, 690
 Heat Exchangers—10, 593
 Heated Flow—6, 467
 Heaters—10, 593
 Heating—6, 149
 Heat of Mixing—7, 668; 8, 668
 Heat Transfer—6, 450; 7, 12, 30; 8, 12, 18, 34, 154, 221, 298, 303, 322, 340, 383, 513, 608, 654, 690; 9, 5, 12, 30, 63
 Heat Transfer—8, 7, 460
 Heat Transfer and Reaction—8, 654
 Heat Transfer Coefficient—7, 587
 Height—6, 239; 9, 239
 Helium—1, 217, 340; 9, 539
 Hematite—1, 437
 Heptane—1, 166, 604; 5, 123
 n-Heptane—5, 587
 Heterogeneous—5, 621; 8, 5, 9, 42, 478
 Hexadecanol—1, 590
 Hexane—5, 646
 n-Hexane—1, 403
 Hildebrand—, 455
 Holding Time—6, 639
 Holdup—9, 252
 Holes—9, 672
 H.T.U.—7, 309
 Hydrate Process—, 176
 Hydrates—9, 176
 Hydraulic Pressure—7, 445
 Hydrocarbons—1, 66, 123, 166, 209, 309, 340, 450, 604, 646, 681; 2, 183; 5, 123, 233, 646; 8, 163; 9, 357, 383, 559, 646
 Hydrodynamics—, 467
 Hydrogen—, 437; 1, 478, 494, 521, 549; 2, 478; 9, 18, 38, 59, 539
 Hydrogen Bonding—8, 668
 Hydrolysis—9, 685
 Hydroxyethyl Cellulose—9, 617
 Hydroxyl Ions—1, 685
 Hypothetical Liquid—9, 508
- I**
- IBM-650—10, 455
 IBM-704—10, 690
 Ideal—, 394; 9, 482
 Ignition—8, 498
 Immiscible—, 471
 Immiscible Liquids—8, 587
 Inconel—5, 654
 Indirectly Controlled—7, 629
 Injection—8, 30
 Inlet Temperature—1, 593
 Input Function—1, 593
 Instability—9, 690
 Integration—10, 581
 Intensity—, 103; 6, 233; 9, 103
 Interactions—9, 38, 86
 Interfaces—6, 478; 7, 309; 9, 171, 309
 Interfacial—8, 350
 Interior—7, 629
 Intermolecular Potentials—9, 521
 Internal—, 494, 549
 Internal Pressure—6, 455; 7, 455
 Inventory—9, 629
 Ion Exchange—8, 248; 9, 79; 10, 79
 Ion Exchange Resin—4, 621; 5, 621; 10, 248
 Iron Oxide—1, 437; 2, 437
 Iron Oxide Spheres—6, 437
 Isotherm—9, 403, 621
 Isothermal—9, 42
- J**
- Jets—9, 149; 10, 450
 j-Factor—7, 608
- K**
- Kaolin (Clay)—1, 266
 Keytones—1, 309
 Kinetic—2, 621
 Kinetics—8, 42, 53, 183, 581, 621, 685; 9, 450, 478
 Kinetic Theory—10, 221
 Kinetic Theory of Gases—10, 521
- L**
- Laminar Flow—8, 79, 154, 190; 9, 70, 154, 266, 317, 335, 389

- 681; 233, 357, 7, 478, 478; g-8, ose-5, d-9, ls-8, d-7, ,593 93, 233; 6, 309; ntials 455; 18; 9, in-4, 48, 7; 2, es-6, 1, 3, 183, 450, 221, Gases 79, 154, 89, 962
- Laminar Jet-10, 685
Laplace Transform-10, 593
Langmuir-, 621
Least Squares-4, 581; 8, 629
Length-6, 166
Limiting-8, 79
Linear-9, 629
Liquid-, 350; 5, 455, 501, 519
Liquid-Liquid-5, 659
Liquid Phase-8, 317, 394; 9, 103, 171, 233, 248, 252, 335, 389, 482
Liquid Phase Activity Coefficients-2, 508
Liquid Phases-8, 93, 329
Liquids-1, 26, 59, 190; 5, 262; 8, 18, 123, 149, 163, 646, 672; 9, 346, 471, 610
Liquid Volume-6, 455
Local-, 12
Local Heat Transfer Coefficients-2, 654
Local Porosity-7, 445
Lumped System-, 693
Lydersen-, 455
- M
Magnetite-1, 437
Manipulated-10, 629
Manufacturing-9, 629
Mass Flow-7, 599
Mass Transfer-7, 70, 93, 205, 659; 8, 34, 38, 70, 171, 205, 245, 248, 309, 322, 346, 383, 389, 549, 608, 646, 649; 9, 79, 93, 113, 166, 183, 205, 214, 217, 245, 252, 329, 394
Material Balance-8, 322
Mathematical Model-8, 593
Mathematics-9, 214; 10, 322
Measurement-9, 190
Mechanics (Not Personnel)-8, 53; 9, 672
Mechanism-8, 649; 9, 53
Mechanisms (Chemical)-9, 183
Membranes-9, 79
Metals-4, 478; 10, 217
Methane-1, 403, 450, 494, 546, 549, 635; 9, 209, 508, 519, 559
Methanethiol-1, 403
Methanol-1, 309, 581; 5, 587
Methods-9, 163; 10, 5, 214
Methyl Bromide-9, 176
Minimax-8, 629
Mists-8, 149
Mixed Suspension-5, 639
Mixing-6, 233; 7, 127; 8, 127, 617; 9, 93, 214
Mixture-9, 221
Mixtures-5, 262; 8, 209, 233, 394; 9, 38, 86, 171, 471, 482, 559, 604, 610, 646, 681
- Models-8, 190; 10, 5, 154, 183, 233, 266, 329, 450
Molecular Beams-10, 521
Molecular Weight-6, 229, 610
Momentum-9, 690
Momentum Transfer-8, 513
Monochlorodifluoromethane-1, 668
Monoethanolamine - 1, 171
Motion-1, 123
Motion Pictures-10, 350
Movement-9, 123
Multicomponent-8, 646, 681
- N
Naphthalene-1, 590
B-Naphthol-4, 346
2-Naphthol-4, 346
Naphthols-4, 346
Natrosol-9, 617
Natural Gas-9, 546
Nickel-4, 478
Nitrates Inorganic-1, 53, 79
Nitric Acid-1, 79
Nitrogen-1, 38, 217, 340, 521; 3, 546; 5, 478; 9, 539
Nitrogen Dioxide-2, 654
Nitrogen Tetraoxide-1, 654
Nonassociated-6, 501
Nonideality-6, 519
Nonisothermal Flow-6, 467
Non-Newtonian-, 154, 266, 346, 663
Non-Newtonian Flow-8, 467
Non-Newtonian Fluid-9, 617
Nonpolar Internal Pressure-6, 455
Normal Boiling Point-8, 536
Nozzles-10, 672
Nucleation-6, 639; 8, 63
Nuclei Dissolving-6, 639
Numbers-9, 154; 10, 383
Numerical-10, 303
Numerical Integration-10, 690
Nusselt-, 154, 383
- O
Octane-9, 383
Olefins-2, 183; 9, 357
Opening Angle-6, 599
Operations-9, 214, 629
Optimization-8, 629
Organic-8, 117
Orientation-6, 335
Orifice-9, 127; 10, 127, 149
Ostwald-De Waele-, 663
Outlet Temperature-2, 593
Output Function-2, 593
Over-Determined-, 629
Oxides (Inorganic)-1, 38, 171, 266, 340; 4, 183, 478; 9, 38, 127
- P
Packed-, 248, 309, 340, 359, 394, 608
Packed Spheres-10, 123
Packings-8, 123; 9, 309; 10, 123, 659
Paraffins-9, 66, 357
Parallel-, 593
Parallel-Counter-, 593
Parameters-, 127; 10, 113
Partial-, 5, 205
Particles-6, 478; 8, 5, 93; 9, 53; 10, 217
Particle Size-6, 490
Path Number-6, 536
Patterns-7, 149; 8, 350
Pellets-2, 490; 8, 5; 10, 183, 217
Penetration-, 93, 394; 10, 205
Penetration Theory-9, 685
n-Pentane-1, 403, 635
Performance-9, 252
Periodic Upsets-6, 639
Permeability-7, 298
Perturbation-1, 407
Petroleum-9, 335
pH-6, 685
Phase Behavior-2, 635; 8, 546
Phase Diagrams-9, 209
Phase Equilibria-8, 604
Phase Equilibrium-8, 681
Phases-8, 18, 163, 604, 681; 9, 209, 482
Photography-10, 127, 350
Physical Properties-, 383; 6, 53, 93, 217, 309, 471, 478; 7, 359; 8, 59, 86, 113, 190, 229, 340, 357, 359, 478, 521, 559, 610; 9, 117, 183, 217, 221, 239, 298, 329, 335, 346, 482, 681
Physics-8, 53; 9, 672
Pilot Stabilized Flame-4, 498
Pipe Flow-8, 467
Pipes-10, 18, 26, 266, 317
Plasma-10, 450
Plastics-10, 248
Plates-10, 690
Polar Internal Pressure-6, 455
Polarity-8, 117; 9, 66, 86, 229
Polarity Number-6, 536
Polarization-9, 245
Polygons-2, 350
Polyhydric Alcohols-1, 248; 5, 123
Polymers-8, 317; 9, 610; 10, 248
Population Density-7, 639
Porosity-, 113, 383; 7, 359, 490; 8, 113, 298, 359, 478; 9, 183, 217, 298
Porous Vycor-5, 539
Positions-6, 127
- Potential Energy Functions-9, 521
Powders-1, 490
Power-7, 262; 8, 93, 262
Power Input-7, 617
Power Law-, 663
Power-Law Fluids-9, 467
Prandtl-, 303
Predicting-8, 79, 329, 346, 482, 521, 559, 608, 610; 9, 18, 117, 163, 190, 389
Predictions-8, 205; 9, 38, 154, 171, 221, 357
Pressure-, 209; 6, 163, 183, 190, 205, 298, 403, 455, 478, 490, 498, 519, 546, 604; 7, 668; 8, 113, 149, 209; 9, 5, 229, 357
Pressure Drop-7, 239, 599; 8, 26; 9, 18
Pressure Excess-7, 635
Probability-8, 629
Process Dynamics-8, 593
Profiles-8, 394, 450; 9, 26, 239, 690
Propadiene-1, 681
Propagating-, 350
Propane-1, 403, 681; 9, 508
Propanethiol-1, 403
Propanol-1, 183
Properties (Characteristics)-, 383; 6, 93, 176, 217, 309, 417, 478; 7, 359; 8, 59, 79, 113, 176, 190, 221, 229, 340, 357, 359, 478, 521, 559, 610; 9, 117, 183, 209, 217, 221, 239, 298, 329, 335, 346, 681
Proportions-6, 335
Propylene-1, 581, 681; 9, 539
Propylene Oxide-1, 581
Propyne-1, 681
Pseudoplastic Fluids-9, 467, 617
Pulsed-, 659
Purification-9, 546
- Q
Quantity-6, 335
Quartz-1, 490
Quenching-6, 498
- R
Rachig Rings-10, 309
Radial-, 359
Radiating-9, 12
Radiation-10, 239
Radiations-8, 12
Radio Active Materials-9, 53; 10, 53
Rate-, 494, 549; 7, 685
Rate Constants-2, 581
Rates-, 205; 6, 30, 335, 450; 7, 70, 93, 154, 183, 205, 217, 248, 329; 8, 38, 42, 53, 70, 171, 183, 205, 221, 245, 309, 346, 383, 389; 9, 63, 79, 205, 217, 248, 450, 690
Rates-9, 7, 478
Reaction-8, 621
Reaction Kinetics-8, 42, 322; 9, 478
Reaction Mechanics-8, 5; 9, 450, 478
Reaction Mechanisms-9, 183
Reactions-6, 70; 7, 205; 8, 5, 42, 70, 171, 176, 183, 205, 389, 437; 9, 171, 245, 389, 450, 478
Reactors-9, 437; 10, 42, 322, 437, 450, 478
Recycling-10, 42
Redox-, 245
Reduced-, 455
Reduction-7, 437; 8, 437
Reference Enthalpy-6, 654
Regulate-8, 629
Reidel-, 455
Relationships-8, 357; 9, 117
Relative Volatility-7, 681
Residence-8, 450
Residence Time-6, 437
Resistance-10, 113
Response Function-2, 593
Reynolds-8, 26
Reynolds Number-6, 303, 608; 8, 123
Rheology-, 663; 8, 154, 317
Rings-10, 309
Rinsing-7, 649; 8, 649
Ripples-2, 350
Rotating Disk Contactor -, 252
Rotation-9, 252
- S
Salts-10, 217
Satisfactory Operation-9, 629
Scatchard-, 455
Scattering-10, 521
Schlieren-, 350
Sea Water-9, 176
Seed Crystal Dissolving-6, 639
Selection-8, 66; 9, 66
Self Diffusion-9, 521
Separation-7, 166; 8, 659; 9, 66, 79, 166, 214, 394
Shapes-7, 30
Shear-8, 123, 317
Sheets-8, 672
Short-Range Planning-9, 629
Sieve Plates-10, 659
Silica-1, 635; 4, 183
Silica Gel-4, 549
Silver-10, 217
Silver Nitrate-1, 79
Simultaneous-8, 629
Sinks-9, 245
Size-6, 93, 239, 262, 478; 7, 30, 149, 350; 8, 672; 9, 252
Size Distribution-7, 639
Simulation-9, 53
Slurries-9, 346

- Slurry-1, 460
Soaking-8, 123
Sodium Chloride-1, 490
Sodium Sulfate-1, 460
Solids-5, 298; 9, 113, 217, 298, 340
Solubilities-7, 501
Solubility-8, 519, 546, 668
Solubility Parameters-2, 508; 9, 681
Solution-J. 460; 5, 519, 649
Solutions-2, 668
Solutions (Mixture)-8, 79, 233, 317, 394, 482; 9, 335, 604, 681
Solution Theory-8, 455
Solvent-4, 455
Solvents-8, 66; 9, 66, 335, 646
Sources-9, 245
Speed-6, 262
Sphere-5, 663
Spheres-9, 359, 608; 10, 34, 383
Spontaneous-2, 350
Sprayers-10, 672
Spraying-8, 460; 9, 149
Sprays-8, 149
Stability-8, 672; 9, 513, 690
Stages-9, 214
Stagnation-, 513
Standard State Fugacities-2, 508
Steam-1, 30
State Conditions-9, 209
Stationary-, 350
Statistical-8, 629
Step-Change-1, 407
Stirrers-10, 262
Stirring-9, 93
Stresses-8, 317
Stripes-2, 350
- Structural-, 113
Sucrose-1, 490
Super Heating-6, 149
Supersaturation-6, 639
Surface-4, 635; 8, 478
Surface Flow-7, 539
Surface Temperature-6, 590
Surfaces-6, 659; 8, 12, 30; 9, 5
Surface Tension-6, 309, 478
Surfactants-6, 262
Suspension-8, 149; 9, 93, 266
Suspensions-9, 346
- T
- Tables-2, 490
Tanks-10, 93
Techniques-9, 163; 10, 5, 214, 303
Temperature-, 437; 6, 12, 30, 42, 149, 154, 183, 190, 221, 229, 403, 455, 546, 590, 604, 610, 668, 681; 7, 303, 513; 8, 209, 450, 478; 9, 5, 357, 690
Temperature Difference-6, 587
Temperature Gradient-6, 539
Ternary-, 38, 221; 9, 209
Tetraethylene Glycol Dimethyl Ether-1, 668
Theorem of Corresponding States-10, 455
Theoretical-5, 460
Theoretical Analysis-1, 445
Theories-10, 93, 303, 394
Theory-10, 171, 205, 346, 389, 646
- Thermal-8, 12; 9, 166
Thermal Conduction-8, 322
Thermal Conductivity-, 221; 7, 221, 340, 610; 8, 221, 340, 610; 9, 221
Thermal Diffusion-9, 521
Thermodynamic-, 176
Thermodynamics-5, 501; 8, 394, 482, 604, 681; 9, 117, 163, 209, 559; 10, 322
Thorium Dioxide-1, 266
Thymol-1, 590
Time-6, 350, 649; 8, 450
Titanium Dioxide-1, 266
Toluene-1, 309, 646; 5, 233, 659
Total Pressure-6, 445
Towers-10, 309
Tracers-10, 53
Trajectory-8, 460
Transfer-8, 690
Transfer Functions-8, 593
Transferring-8, 34, 303; 9, 5, 30, 53, 79, 248
Transient Behavior-7, 639
Transient Response-2, 407; 8, 593
Transition-8, 467
Transition State-, 685
Transport-7, 154; 8, 12, 30, 34, 38, 70, 221, 245, 266, 346, 383, 646, 649; 9, 63, 79, 166, 217, 248, 298, 329
Transport Properties-8, 521
Triangular Duct-5, 599
Trichloroethylene-1, 309
Trichlorofluoromethane-1, 18
Triethylene Glycol Dimethyl Ether-1, 668
Tube Flow-8, 467
Tubes-10, 18, 26, 154, 266, 317, 335, 450
Tunnels-10, 103
Turbine Impellers-10, 617
Turbines-10, 262
Turbulence-8, 103, 471; 9, 30, 34, 70, 103, 266, 335, 383, 389, 672
Turbulent Boundary Layer-6, 498
Turbulent Intensity-6, 498
Twot Film Theory-10, 389
- U
- Uncontrolled-6, 629
Unsteady State-9, 389; 10, 205, 248, 389
Upper Velocity Limit-7, 498
- V
- Vacuum-5, 590; 8, 298
Van Arkel-, 455
Van der Waals Constants-6, 610
Van Laar-, 455
Van Laar Constants-2, 508; 7, 455
Vapor-5, 455, 501, 519
Vapor-Liquid Equilibria-8, 604
Vapor-Liquid Equilibrium-8, 681
Vapor-Liquid Equilibrium Data-1, 508
Vapor Phase-5, 621; 9, 482
Vapor Pressure-8, 357; 9, 604
Vapor Pressure-6, 7, 590
Vapor Pressure Slope-6, 455
Vapors-8, 117, 163
Vaporization-8, 309; 9, 34
Vaporization Equilibrium Constants-2, 508
Variational-10, 663
Variations-7, 359
Vector Analysis-8, 214
Velocities-6, 205, 239, 248; 7, 513
Velocity-6, 30, 127, 473, 478; 7, 149, 350, 599; 9, 26
Vinyl Compounds-2, 183
Viscometry-9, 190
Viscosity-6, 93, 599, 654; 7, 229, 335; 8, 59, 190, 229; 9, 154, 335, 521
Visual-, 209
Voids-, 217; 7, 359; 8, 359
Volume-9, 86
Vortex-6, 617
- W
- Wakes-9, 103
Walls-9, 245
Water-, 103; 1, 26, 149, 205, 233, 309, 685; 2, 42, 183, 621; 5, 30, 53, 79, 123, 171, 248, 262, 266, 309, 346, 587, 649, 659, 685; 8, 163; 9, 6, 17, 34, 59, 103, 335
Wetted Wall-, 171, 205
Wetting-6, 659

INFORMATION RETRIEVAL*

Key Words: A. Kinetics-8, Correlation-2, Computers-10, Differential Equations-1, Concentrations-2, Integration-10. B. Kinetics-8, Ethylene Oxide-1, Ammonia-1, Ethanolamines-2, Benzene-1, Chlorine-1, Chlorobenzene-2, Methanol-1, Propylene-1, Propylene Oxide-1, Correlation-1, Computers-10, Rate Constants-2, Concentrations-1, Least Squares-4.

Abstract: A new method of obtaining an approximate integral solution of a set of differential rate equations is described. The method is used to correlate experimental data on systems whose stoichiometry would indicate a consecutive competitive mechanism. The estimates of the rate constants, found by fitting the approximate solution to the data, are within experimental error of the values obtained by other methods.

Reference: Friedman, M. H., and R. R. White, *A.I.Ch.E. Journal*, 8, No. 5, p. 581 (November, 1962).

* For details on the use of these key words and the A.I.Ch.E. Information Retrieval Program, see *Chem. Eng. Progr.*, 57, No. 5, p. 55 (May, 1961), No. 6, p. 73 (June, 1961); 58, No. 7, p. 9 (July, 1962).

(Continued on page 705)

ERRATUM

It has been called to the attention of R. E. Emmert and R. L. Pigford by Professor P. V. Danckwerts that some data which they extracted from a paper by Bates and Pinching* were misinterpreted in "Gas Absorption Accompanied by Chemical Reaction," which appeared in the May, 1962, issue of the *A.I.Ch.E. Journal*. As a consequence, Emmert and Pigford's analysis of the relative effects of competing reactions based on previous workers' data must be modified. This change does not in any way alter their own data or their interpretation. This erratum describes the changes needed to account for this misinterpretation. All changes are in the section labeled "Reaction Mechanism."

In order to determine the concentrations of hydroxyl ion and free amine

* Bates, R. G., and G. D. Pinching, *J. Research Natl. Bur. Standards*, 46, 349 (1951).

1; 9,

357;

590
e-6,

9; 9,

rium

14

239,

473,
599;

183

654;
59,
335,

9; 8,

149,

2,

30,

248,

346,

8,

59,

05

of
by
ome
a
ere
Ac-
on,"
is-
on-
mal-
bet-
ous
his
eir
his
led
on.
led

en-
ine
arch